

**AMENDMENTS TO THE CLAIMS**

Please amend claims 1-16 and 19-24, cancel claims 17, 18, 25 and 26, and add new claims 27 and 28 as follows:

1. (currently amended) A semiconductor optical waveguide device, comprising a semiconductor layer having an upper surface, and a lower surface which is defined by a lower confinement layer, the semiconductor layer having formed therein:
  - (a) a waveguide;
  - (b) at least one recess adjacent to the waveguide and extending from the upper surface of the semiconductor layer;
  - (c) at least one doped region, at least part of which is situated between ~~a said~~ the recess and the lower confinement layer; and
  - (d) at least one trench adjacent to ~~a said~~ the doped region and the recess and situated on an opposite side thereof to the waveguide, wherein the ~~(or each)~~ trench extends from the upper surface of the semiconductor layer.
2. (currently amended) A device according to Claim 1, wherein the ~~(or each)~~ trench is deeper than ~~its~~ the adjacent recess.
3. (currently amended) A device according to Claim 1 ~~or Claim 2, in which~~ wherein the ~~(or each)~~ recess is spaced apart from ~~its~~ the adjacent trench.
4. (currently amended) A device according to Claim 1 ~~or Claim 2, in which~~ wherein the ~~(or each)~~ recess is not spaced apart from ~~its~~ the adjacent trench, so that the recess and the trench comprise a single larger feature.
5. (currently amended) A device according to ~~any preceding claim~~ Claim 1, ~~in which~~ wherein the ~~(or each)~~ doped region extends substantially to the lower confinement layer.

6. (currently amended) A semiconductor optical waveguide device, comprising a semiconductor layer having an upper surface, and a lower surface which is defined by a lower confinement layer, the semiconductor layer having formed therein:
  - (a) a waveguide;
  - (b) at least one doped region extending substantially to the lower confinement layer; and
  - (c) at least one trench adjacent to, and spaced apart from, ~~a said the~~ doped region and situated on an opposite side thereof to the waveguide, wherein the ~~(or each)~~ trench extends from the upper surface of the semiconductor layer.
7. (currently amended) A device according to Claim 6, ~~any preceding claim, in which~~ wherein the ~~(or each)~~ trench extends substantially to the lower confinement layer.
8. (currently amended) A device according to Claim 6, ~~any preceding claim, in which~~ wherein the waveguide is a rib waveguide, ~~comprising~~ having a rib portion.
9. (currently amended) A device according to Claim 6, ~~any preceding claim, in which~~ wherein the semiconductor layer comprises silicon.
10. (currently amended) A device according to Claim 6, ~~any preceding claim, in which~~ wherein the lower confinement layer is a confinement layer for electrical charge carriers.
11. (currently amended) A device according to Claim 6, ~~any preceding claim, in which~~ wherein the lower confinement layer is a confinement layer for an optical mode propagated by the waveguide.

12. (currently amended) A device according to Claim 6, ~~any preceding claim, in which~~  
wherein the lower confinement layer is an electrically insulating layer.
13. (currently amended) A device according Claim 6, ~~to any preceding claim, in which~~  
wherein the lower confinement layer comprises silica.
14. (currently amended) A device according to Claim 6, ~~any preceding claim, in which there~~  
~~is further comprising~~ a substrate layer below the lower confinement layer.
15. (currently amended) A device according to Claim 14, ~~in which~~ wherein the substrate  
layer comprises silicon.
16. (currently amended) A device according to Claim 6, ~~any preceding claim, in which there~~  
~~are further comprising~~ two of said doped regions, the doped regions being situated on  
opposite sides of the waveguide.
17. (cancelled)
18. (cancelled)
19. (currently amended) A device according to Claim 8, ~~18 when dependent upon Claim 8,~~  
~~in which the~~ further comprising an additional doped region ~~is~~ situated in the rib portion  
of the rib waveguide.

20. (currently amended) A device according to Claim 6, ~~any preceding claim, in which there are further comprising~~ two of said trenches, the trenches being situated on opposite sides of the waveguide.
21. (currently amended) A device according to Claim 16, ~~or any claim dependent thereon, in which wherein~~ the doped regions comprise n-doped and p-doped regions.
22. (currently amended) A device according to Claim 6, ~~any preceding claim, which comprises~~ further comprising a p-i-n diode.
23. (currently amended) A device according to Claim 22, ~~which comprises wherein the p-i-n diode comprises~~ a lateral p-i-n diode.
24. (currently amended) A device according to Claim 6, ~~any preceding claim, which comprises~~ further comprising an optical modulator.
25. (cancelled)
26. (cancelled)
27. (new) A device according to Claim 2, further comprising two of said recesses, the recesses being situated on opposite sides of the waveguide.
28. (new) A device according to Claim 1, further comprising an additional doped region.